



March Newsletter

Better Justice Through Better Science™

Colorado Forensic Analysts Manipulate DNA Data



The Colorado Bureau of Investigation (CBI) [revealed](#) that “Yvonne ‘Missy’ Woods manipulated data in the DNA testing process, posting incomplete test results in some cases.” CBI’s investigation potentially implicated another government analyst who “may have also manipulated DNA testing data.”

“Public trust in our institutions is critical to the fulfillment of our mission,” said CBI Director Chris Schaefer. “Our actions in rectifying this unprecedented breach of trust will be thorough and transparent.”

Cybergenetics provides accurate crime laboratory audits that automatically review DNA data. TrueAllele® computation can “open the past” to objectively determine how much identification information the evidence

has. Such an independent computer analysis – of the entire lab, and not just Ms. Woods – may be needed to restore “public trust” in a meaningful “thorough and transparent” way.

Cybergenetics has repeatedly contacted CBI about helping them accurately interpret their [JonBenet Ramsey DNA](#) data, at no cost. CBI has not accepted the company’s [free TrueAllele screening](#) offer.

DNA Manipulation

The Miramar Murders TV Show

About the Pablo Ibar Trial



On June 6, 1994, two masked gunmen burst into Casimir "Butch Casey" Sucharski's home in Miramar, Florida. They shot and killed Sucharski, owner of Casey's *Nickelodeon*, and his two nightclub dancers Sharon Anderson and Marie Rogers. A hidden video camera recorded the killers pumping bullets into three bound bodies on the floor. One gunman then removed the T-shirt from his face; it looked like Pablo Ibar.

The DNA of Ibar and victim Sharon Anderson were mixed together on the T-shirt. The county crime lab’s DNA results were limited. But Cybergenetics’

more powerful TrueAllele® computer analysis found that a match between the shirt and Ibar was [353 trillion times more probable](#) than coincidence. And placed Anderson on the shirt as well.

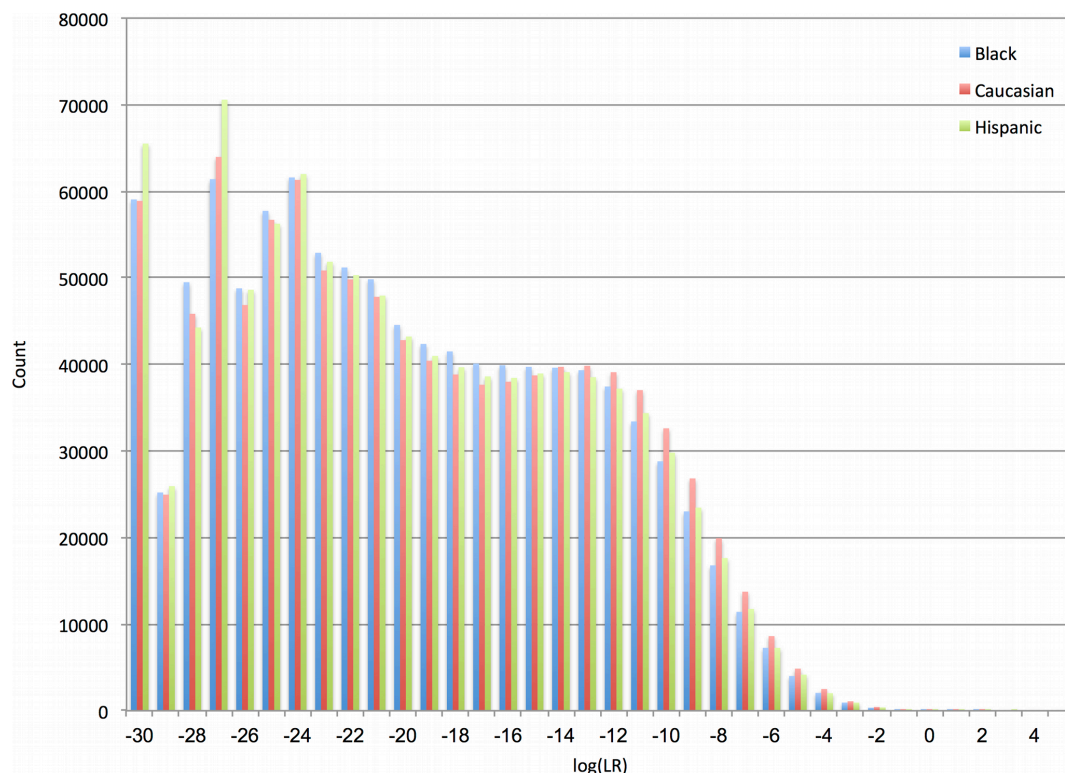
A six-episode television documentary [The Miramar Murders: The State vs. Pablo Ibar](#) covers the 2018 Fort Lauderdale trial. Towards the [end of Episode 3](#), Cybergenetics Chief Scientist Dr. Mark Perlin testifies about the TrueAllele® T-shirt evidence.

Asked about how many people contributed their DNA to the T-shirt, Dr. Perlin said, “Whether we assume two contributors or three contributors, the major contributor (over 50% of the DNA) kept coming back to the same individual – Mr. Ibar – with a match statistic in the hundreds of trillions. So [the number of contributors] didn't make a difference.”

Regarding the unbiased TrueAllele computer system, Assistant State Attorney William Sinclair observed, “The data is the data. The results are the results.” Defense Attorney Fred Haddad commented, “I think the DNA, before Perlin, was not as problematic as it became. But when Perlin found a mix of Pablo's DNA with the dead girl, that changed the whole thing.”

Ibar Convicted

Opening the Past for a Better DNA Future



In 2010, the United States imposed a dubious national forensic standard. A new “stochastic threshold” guideline for manual interpretation required analysts to ignore more of their DNA mixture evidence data. Throughout the country, previously informative DNA evidence became uninformative. Many criminal cases were affected; some crime laboratories closed.

After implementing these new guidelines, in 2011 the Virginia Department of Forensic Science (DFS) identified 375 affected criminal cases where the new guideline had changed DNA to an inconclusive result or a lower match statistic. Seeking accurate identification information, DFS arranged for Cybergenetics to [apply their validated TrueAllele Casework system](#) to DNA mixture evidence in 144 cases. TrueAllele was the first – and only available – “probabilistic” genotyping computer system.

During the DFS project, Cybergenetics produced DNA match reports on 92 evidence items in 72 cases. These revived forensic reports “opened the past” to reveal new DNA information. The resulting trial testimony had an [immediate impact](#) on criminal justice.

Cybergenetics and DFS jointly published their findings in a groundbreaking [PLoS ONE journal validation study](#) that established many axes of TrueAllele reliability. We numerically measured DNA information using *match statistics* (technically, the $\log(LR)$ or “likelihood ratio logarithm”).

Our study compared match statistic information obtained by three different mixture interpretation methods – TrueAllele computation, and two manual approaches – on the same casework mixture data. The 2014 paper found that “TrueAllele computer interpretation of DNA mixture evidence is sensitive, specific, precise, accurate and more informative than manual interpretation alternatives.”

One novel finding was how to rigorously use real casework data in a validation study. Previously, many scientists had only used “ground truth” data from laboratory-constructed DNA mixtures of known composition. Our paper removed this artificial limitation. We first established that TrueAllele has a very low false positive error rate for informative DNA match statistics (see Figure above). This high *specificity* let us “safely examine the *sensitivity* distribution of positive $\log(LR)$ values” for reported casework DNA matches.

Validation Study

Pennsylvania Prosecutors Use TrueAllele in Homicide Guilty Plea



[Allegheny County Courthouse](#) ©Dilu, [CC BY-SA 4.0](#)

In January 2023, the body of Kenneth Lennex was found in a wooded Pittsburgh area, shot eight times in the head. Police discovered blood and bullets at a suspect's home on Kingsboro Street. A Taurus pistol and a revolver were tested for DNA. The crime lab reported, "Due to the data being uninterpretable, no comparison can be made to the reference samples."

Cybergenetics reinterpreted the lab's "uninterpretable" DNA data. TrueAllele computing connected the pistol and revolver to [defendant Le'Juane Powell](#), finding DNA match statistics of 2.32 trillion and 746 trillion, respectively. In March 2024, the defendant pleaded guilty to third-degree murder. Powell was [sentenced to 22 to 44 years](#) in prison.

TrueAllele Cases

Women's History Month and Rosalind Franklin's Double Helix



[Rosalind Franklin in Paris](#) © CSHL, [CC BY-SA 4.0](#)

March is *Women's History Month*, a time to celebrate the achievements of women throughout history. Science trailblazer Rosalind Franklin's work on [elucidating the DNA double helix](#) paved the way for modern molecular biology, with applications to medical and forensic science.

In the early 1950's, at King's College in London, biophysicist Franklin used X-ray diffraction to produce high-resolution images of DNA molecules. Her famous "[Photo 51](#)" gave critical evidence for DNA's helical structure. Her data and analysis were instrumental in guiding James Watson and Francis Crick to later build their Nobel Prize winning double helix model.

Today, Cybergenetics pioneering TrueAllele® computer technology resolves laboratory data to give [critical evidence for DNA identification](#). Before TrueAllele, crime labs couldn't properly interpret complex DNA mixtures. The labs discarded vital evidence as "inconclusive," or reported inaccurate

DNA match statistics. Cybergenetics' forensic DNA inventions help scientists reveal essential truth for better justice.

Forensic Pioneer

Cybergenetics will be attending this upcoming conference



- 4/23 - 4/26 WAHI (Wisconsin Association of Homicide Investigators) in Wisconsin Dells, Wisconsin

Free Screening



Cybergenetics

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